Application No. 09/942,478
Amendment dated October 11, 2004
Response to Office Action of August 11, 2004

Atty. Docket No. 042390.P10853
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Amendments to the Claims

Please amend the claims as indicated below. All claims are listed below, with amended claims so marked. This listing of claims will replace all prior versions, and listings, of claims in the application:

1   1.   (Original) A method for constructing a first image and a second image of an

2   omnivergent stereo image pair, comprising:

3   rotating a deflector about a rotation axis, the deflector positioned a distance from

4   the rotation axis and having plural deflection regions;

5   positioning a receptor proximate to the rotation axis, the receptor comprising a

6   first portion of sensors and a second portion of sensors;

7   deflecting a first input received at a first deflection region of the deflector to the

8   first portion of sensors;

9   deflecting a second input received at a second deflection region of the deflector

10   to a second portion of sensors;

11   determining the first image based at least in part on the first input;

12   determining the second image based at least in part on the second input; and

13   determining a first omnivergent stereo pair based at least in part on the first

14   image and the second image.

1   2.   (Original) The method of claim 1, further comprising:

2   wherein both the first image and the second image are omnivergent images.

1   3.   (Original) The method of claim 1, further comprising:

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2   selecting a view point; and

3   rendering a three dimensional imaged based at least in part on the view point

4 and the first omnivergent stereo pair.

1   4.   (Original) The method of claim 1, wherein the distance is fixed.

1   5.   (Original) The method of claim 1, further comprising:

2   performing the method at a first location to determine the first omnivergent stereo

3 pair;

4   performing the method at a second location to determine a second omnivergent

5 stereo pair; and

6   synthesizing an environment model based at least in part on the first omnivergent

7 stereo pair and the second omnivergent stereo pair.

1   6.   (Original) The method of claim 5, wherein the first location is proximate to

2 the second location.

1   7.   (Original) The method of claim 5, wherein a first region defined by rotating

2 the deflector about the axis at the first location abuts a second region defined by

3 rotating the deflector about the axis at the second location.

1   8.   (Original) The method of claim 1, further comprising:

2   receiving a configuration input; and

3   setting the distance with respect to the configuration input.

1   9.   (Original) The method of claim 8, wherein the configuration input

2   corresponds to a desired size for a region in which a viewpoint may be selected.

1   10.   (Original) The method of claim 9, further comprising:

2   receiving a viewpoint selection; and

3   rendering a three dimensional image based on the viewpoint selection and the

4   first and the second image.

1   11.   (Original) A method for constructing an omnivergent stereo image pair,

2   comprising:

3   defining a cylindrical region having an axis of rotation perpendicular to a rotation

4   plane, the cylindrical region defined with respect to an array of sensors disposed

5   parallel to the axis of rotation, and a prism disposed parallel to the vertical array; and

6   determining an environment about the cylindrical region by rotating the cylindrical

7   region through rotational positions, and while rotating:

8   receiving a first input at a first face of the prism for a rotational position of

9   the cylindrical region, the first input having a first travel path tangential to the cylindrical

10   region and corresponding to a first portion of the environment, and

11   receiving a second input at a second face of the prism for the rotational

12   position of the cylindrical region, the second input having a second travel path tangential

13   to the cylindrical region and corresponding to a second portion of the environment.

1   12.   (Currently Amended) The method of claim 11 [9], further comprising:

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2   storing the first input and the second input for each of plural rotational positions

3   of the cylindrical region;

4   selecting a view point within the cylindrical region; and

5   constructing a convergent stereo image of the environment with respect to the

6   selected view point and the stored first and second inputs for the plural rotational

7   positions of the cylindrical region.

1   13 [11].   (Currently Amended) The method of claim 11 [9], wherein the first

2   travel path is opposite of the second travel path.

1   14 [12].   (Currently Amended) The method of claim 11 [9], wherein the first

2   and second travel paths are parallel to the rotation plane.

1   15 [13].   (Currently Amended) An article of manufacture, comprising:

2   a machine accessible medium having associated data, which when accessed by

3   the machine, results in the machine performing:

4   rotating a deflector rotably mounted a distance from a rotation axis, the

5   deflector having plural deflection regions for deflecting inputs to a receptor positioned

6   proximate to the rotation axis, the receptor comprising a first portion of sensors and a

7   second portion of sensors;

8   determining the first image based at least in part on a first input received

9   at a first deflection region of the deflector that is deflected towards the receptor;

10   determining the second image based at least in part on a second input

11 received at a second deflection region of the deflector that is deflected towards the

12 receptor;

13   determining a first omnivergent stereo pair based at least in part on the

14 first image and the second image.

1   <u>16</u> [14].   (Currently Amended) The apparatus of claim <u>15</u> [13], wherein

2 both the first image and the second image are omnivergent images.

1   <u>17</u> [15].   (Currently Amended) The apparatus of claim <u>15</u> [13], [QQQ] <u>the</u>

2 <u>instructions comprising further instructions capable of directing a machine to perform</u>:

3   selecting a view point; and

4   rendering a three dimensional imaged based at least in part on the view point

5 and the first omvivergent stereo pair.

1   <u>18</u> [16].   (Currently Amended) The apparatus of claim 13, wherein the

2 distance is fixed.

1   <u>19</u> [17].   (Currently Amended) The apparatus of claim <u>15</u> [13], [QQQ] <u>the</u>

2 <u>instructions comprising further instructions capable of directing a machine to perform</u>

3   performing the method at a first location to determine the first omnivergent stereo

4 pair;

5   performing the method at a second location to determine a second omnivergent

6 stereo pair; and

7   synthesizing an environment model based at least in part on the first omnivergent

8   stereo pair and the second omnivergent stereo pair.

1   <u>20</u> [18].   (Currently Amended) The apparatus of claim <u>19</u> [17], wherein the

2   first location is proximate to the second location.

1   <u>21</u> [19].   (Currently Amended) The apparatus of claim <u>19</u> [17], wherein a

2   first region defined by rotating the deflector about the axis at the first location abuts a

3   second region defined by rotating the deflector about the axis at the second location.

1   <u>22</u> [20].   (Currently Amended) The apparatus of claim <u>15</u> [13], [QQQ] <u>the</u>

2   <u>instructions comprising further instructions capable of directing a machine to perform</u>:

3   receiving a configuration input; and

4   setting the distance with respect to the configuration input.

1   <u>23</u> [21].   (Currently Amended) The apparatus of claim 20, wherein the

2   configuration input corresponds to a desired size for a region in which a viewpoint may

3   be selected.

1   <u>24</u> [22].   (Currently Amended) The apparatus of claim <u>23</u> [21], [QQQ] <u>the</u>

2   <u>instructions comprising further instructions capable of directing a machine to perform</u>:

3   receiving a viewpoint selection; and

4   rendering a three dimensional image based on the viewpoint selection and the

5   first and the second image.

1   25 [23].   (Currently Amended) An apparatus comprising a machine

2   accessible medium having instructions associated therewith for constructing a first

3   image and a second image of a convergent stereo image pair, the instructions capable

4   of directing a machine to perform:

5   defining a cylindrical region having an axis of rotation perpendicular to a rotation

6   plane, the cylindrical region defined with respect to an array of sensors disposed

7   parallel to the axis of rotation, and a prism disposed parallel to the vertical array;

8   determining an environment about the cylindrical region by rotating the cylindrical

9   region through rotational positions, and while rotating:

10   receiving a first input at a first face of the prism for a rotational position of

11   the cylindrical region, the first input having a first travel path tangential to the cylindrical

12   region and corresponding to a first portion of the environment, and

13   receiving a second input at a second face of the prism for the rotational

14   position of the cylindrical region, the second input having a second travel path tangential

15   to the cylindrical region and corresponding to a second portion of the environment.

1   26 [24].   (Currently Amended) The apparatus of claim 25 [23], the

2   instructions comprising further instructions capable of directing a machine to perform:

3   storing the first input and the second input for each of plural rotational positions

4   of the cylindrical region;

5   selecting a view point within the cylindrical region; and

6   constructing a convergent stereo image of the environment with respect to the

7   selected view point and the stored first and second inputs for the plural rotational

8   positions of the cylindrical region.

1   27 [25].   (Currently Amended) The method of claim 25 [23], wherein the

2   first travel path is opposite of the second travel path.

1   28 [26].   (Currently Amended) The method of claim 25 [23], wherein the

2   first and second travel paths are parallel to the rotation plane.

1   29 [27].   (Currently Amended) An apparatus for acquiring input for a first

2   image and a second image of a convergent stereo image pair, comprising:

3   a deflector rotably mounted a distance from a rotation axis, the deflector having

4   plural deflection regions;

5   a receptor positioned proximate to the rotation axis, the receptor comprising a

6   first portion of sensors and a second portion of sensors;

7   a first memory for storing a first input received at a first deflection region of the

8   deflector and deflected towards the first portion of sensors; and

9   a second memory for storing a second input received at a second deflection

10   region and deflected towards the second portion of sensors;

1   30 [28].   (Currently Amended) The apparatus of claim 29 [27], further

2   comprising:

3   an image constructor which determines the first image based at least in part on

4   the first input, and the second image based at least in part on the second input.

1   31 [29].   (Currently Amended) The apparatus of claim 30 [28], further

2   comprising:

3   an interface for receiving a selected view point; and

4   a renderer for rendering a three dimensional imaged based at least in part on the

5   selected view point, the first image, and the second image.

1   32 [30].   (Currently Amended) The apparatus of claim 29 [27], wherein the

2   deflector rotates about the rotation axis, and while rotating, subsequent first and second

3   inputs are received, deflected, and stored in the first memory and the second memory.

1   33 [31].   (Currently Amended) The apparatus of claim 29 [27], further

2   comprising:

3   an interface for receiving a configuration input; and

4   setting the distance with respect to the configuration input.

1   34 [32].   (Currently Amended) The apparatus of claim 33 [31], wherein the

2   configuration input corresponds to a selected one of a desired depth of field for the

3   convergent stereo image, and a desired size for a region in which a viewpoint may be

4   selected.